



Volume 32/Issue 9

Praying Mantids

May 2019

PRAYING MANTIDS

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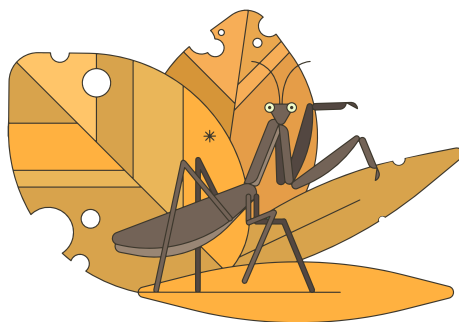
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The Minor Ground Mantid

Idaho has a native praying mantid! But it might not be what you think of when you think of a praying mantid. Our native mantid is not green, and it is not very big. Idaho's native praying mantid is the minor ground mantid.

Minor ground mantids are different in many ways from a praying mantid you might find in your garden. As you probably figured out by their name, ground mantids are usually found on the ground or on plants close to the ground. They also are small. As adults, they are only around one inch long! They have a mixture of grayish-brown colors to help them blend in with soil. They are perfectly camouflaged against the desert landscape of southern Idaho.

Most mantids hunt by waiting for a meal to wander by too close and then reaching out and grabbing their prey. Ground mantids do not wait for a meal to come their way, they go after it! Ground mantids will chase down their meals of moths, flies, grasshoppers and crickets. Ground mantids run fast and have even been known to jump. They may run but they do not fly. Females usually do not have wings; males may be wingless like the females or they may have four wings.

Ground mantids mate in late summer. Like many other mantids, the larger female may eat the smaller male. Scientists don't really know why she eats her mate. It may be to make sure she has all the nutrients she needs to make and lay her eggs. Or she could just be hungry. Mantids are voracious predators. They eat just about any insect they can catch, including other mantids!

Two weeks after mating the female will make an egg case called an ootheca (oh-uh-THEE-kuh) on twigs and branches. The ootheca is foamy when it is made, but it will dry and harden to protect the 10 to 20 eggs inside. The adults die over the winter, but the eggs are safe in the case. Young mantids, called nymphs, emerge in the spring.

Ground mantids may be small, but they still need defenses. Birds, lizards and other insects may eat them. One of their best defenses is camouflage. They try to disappear against their background. They can also run and hide. The last thing they can do is act big and aggressive. They stick out their front legs and stand as tall as they can to try and intimidate predators.

Our native praying mantids may be small, but they sure are interesting and tough!

Cool Praying Mantids

Praying mantids are cool! This is a group of insects that seem to have character.

There are about 1800 different species of mantids. Are you wondering why the name praying mantid is being used instead of praying mantis? Mantises are a small group of insects within the larger mantid group. Mantis refers to the scientific name of some mantids.

Praying mantids got their name because of how they hold their front legs. When hunting, they fold their legs in a “praying” position. When another insect gets close, they strike out and capture their prey with spines on their legs. The spines fit into grooves on the lower part of the legs when the mantid is not hunting.

Praying mantids are amazing predators and they have many adaptations that help them while hunting. Camouflage helps praying mantids blend in and hide. They may be green, brown, gray or a mixture of these colors. Even the same species may be different colors. They can also rotate their heads 180 degrees! They seem to look right at you with their large compound eyes, and they are! The outside of each compound eye is sensitive to movement. The front of each eye has an area of higher focus, called a fovea (fo-VEE-uh). Mantids sense movement then turn their heads to bring the object into the focal part of the eye. They can

track the movement of prey and turn their heads to keep prey in focus. Then they can strike at the best time to capture their victim.

Mantids eat all kinds of insects. Many gardeners have released praying mantids into their gardens thinking they would eat garden pests. Praying mantids do eat aphids and grasshoppers, but they also may eat bees, butterflies, ladybugs and other beneficial insects. Placing praying mantids in a garden is no guarantee they will help with pest control! They eat any insect good or bad. Many people have bought praying mantid egg cases and released mantids in their gardens. They are the Chinese mantid and the European mantis. These are the praying mantids that we usually see in Idaho. They are between three to four inches long and green or brown in color.

Many different predators may eat mantids, including bats! But some mantids that fly have a way to avoid bats. They have an ear that can detect ultrasonic frequencies. They can hear bat echolocation calls! When a bat is detected, mantids change their flight pattern. They may fly in loops or twirls. They may even drop straight down to avoid a bat.

See if you can find a praying mantid this spring and summer. Watch it and see what it is tracking with its eyes. You may just find that it has been watching you, too!



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WHAT'S AN INSECT?

They are on the ground, in trees, in soil and in your house. They make up about 80 percent of all known animal species on Earth. Insects are all around us.

Sometimes any small creepy crawly is called an insect, but to be an insect an animal must meet three important rules as adults. They must have three main body parts – the head, thorax (THOR-aks) and abdomen (AB-do-men), six legs and two antennae (an-TEN-ee).

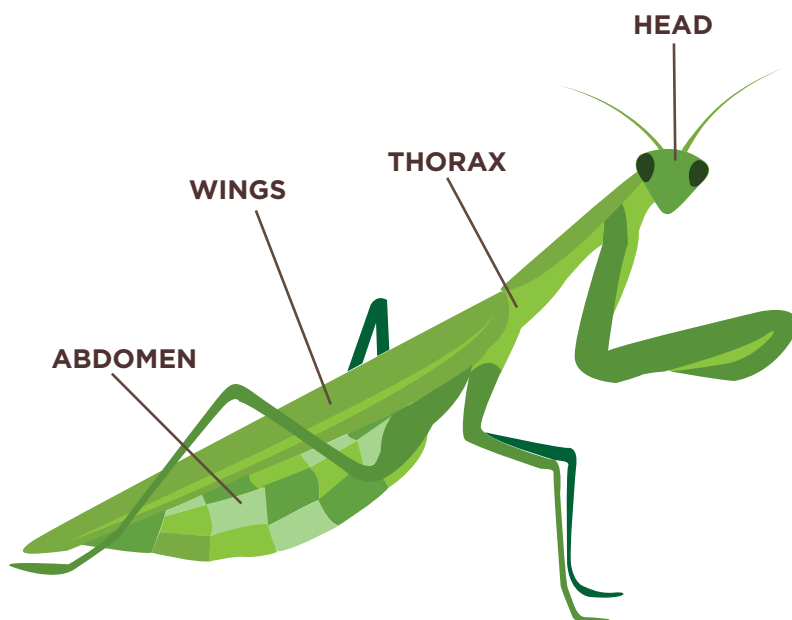
The head of an insect has the eyes, antennae and mouthparts on it. Insects have two large compound eyes. Compound eyes are faceted (FAS-et-ed). They have more than one lens or surface. Close up, compound eyes look a bit like a honeycomb. Insects may also have up to three simple eyes. You have simple eyes. A simple eye has one surface or facet. Without moving their heads, some insects can see in a full circle around their bodies.

The thorax, or middle part of an insect, is where the wings and legs are found. All adult insects have legs, but not all insects have wings. A praying mantid has two pairs of wings.

Most insects breathe through tiny holes on their abdomens called spiracles (SPIR-i-kels). Insects that live in water might drown if they had spiracles, so insects that spend a lot of time in water have a way to deal with water entering their spiracles. Water beetles carry an air bubble against their spiracles while underwater. They get oxygen from the bubble. When the bubble starts to run out of air, water beetles swim up to the surface of the water and grab another air bubble. Other water insects breathe with gills just like fish. Some have a sort of snorkel they stick above the water to breathe air.

Insects have an exoskeleton (ek-so-SKEL-et-en). An exoskeleton is a hard fingernail-like covering on the outside of the insect's body. The exoskeleton is divided into separate pieces called plates. The plates fit together like a puzzle and are held together with soft flexible membranes. The membranes work like rubber bands. They allow the insect to move its body. The exoskeleton can only flex. As insects grow, their exoskeletons become too small. Insects need to shed their exoskeletons, just like snakes shed their skins. This process is called molting.

Insects come in all shapes and sizes. Hairy-winged beetles and fairyflies are some of the smallest insects. They can fit through the eye of a needle! The longest insect is a 13-inch long walkingstick found in Malaysia. Atlas moths in India have the largest wings at 12 inches across. Goliath beetles found in Africa are the bulkiest and heaviest. They can be as big as a baseball. Wow, what diversity. Insects sure are amazing animals!





NATURE'S *Transformers*

Can you think of an animal that changes the shape of its body as it grows? How about a butterfly? They change from crawling insects that chew their food to beautiful, flying insects that drink their food. What a change! They go through a metamorphosis (met-a-MOR-fo-sis).

There are many kinds of metamorphosis in the insect world. There are insects that make big changes, like the butterfly. This is called complete metamorphosis. There are other insects that don't seem to change at all. This is called simple metamorphosis. Insects with simple metamorphosis have three life stages – egg, nymph and adult.

Insects that have complete metamorphosis have four stages in their life cycle – egg, larva, pupa and adult. Tiger beetles are in this group. Tiger beetles lay eggs in the ground. Larvae hatch out of the eggs. Larvae may be called different names; it all depends on the type of insect. Fly larvae are called maggots. Butterfly larvae are called caterpillars. Some beetle larvae are called grubs. Tiger beetle larvae don't look anything at all like the adults. They look like worms with heads and big jaws for mouths. When the grubs reach a certain size and the time is right, the larvae turn into pupae. They make a case around their bodies. This is when some of the biggest changes happen. Inside their cases they change from worm-like larvae into insects that actually look like beetles.

Metamorphosis is amazing to see. If you find a pupa, leave it outside, but look at it every day. You may be able to see the insect changing and developing inside. It is fun to see what will emerge!



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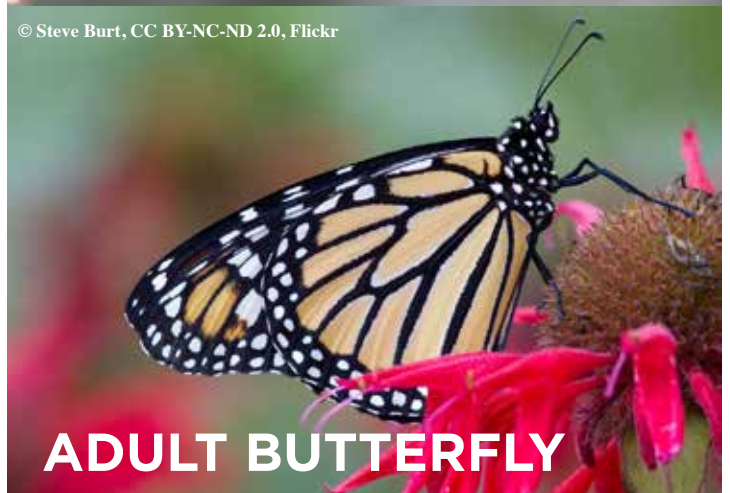


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A **BUG** — *Squish It!!*

Often when we think of insects, we think of things that bite us, sting us, or suck our blood. Sometimes it is easier to see the harmful things that insects do and not see their benefits. Can you imagine a world without insects? Sitting around a campfire may be a bit more pleasant, but other things would also be affected. Our lives would be very different. It is unlikely that we would be able to survive on Earth without insects.

Insects help make the food we eat. Insects pollinate more than 200 kinds of crop plants just in the United States. Take away insects and there would be no carrots for salads, no watermelon or apple pie, no vanilla or strawberry ice cream. We would also have a world without chocolate. A tiny fly, no bigger than a pin head, pollinates cacao flowers. Chocolate is made from the seeds found in the cacao seed pod.

There would be no honey, silk, inks or dyes. Insects and insect parts are used to make jewelry and beads. Insect products are even used to make medicines to fight off infections and help with painful arthritis.

Insects are valuable scientific tools. They have been used for studying ecology and genetics. Because grasshopper and cockroach nerves are similar to humans, they have been used to test the affects chemicals might have on people.

Insects are important parts of the food web. Bats, birds, skunks, raccoons and fish are just some animals that eat insects. Even insects eat insects! Praying mantids and ladybugs eat insects that can be harmful to crops and garden plants. Insects are also important decomposers. Think of all the dead trees, dead animals and animal poop there would be with no insects to help clean things up.

Have you ever stopped to watch an insect? Many people like to watch and photograph butterflies and other insects. People in China even keep crickets as pets!

Next time you feel like squishing an insect, think about what the insect does for you. You may think twice about smashing that bug. Well, maybe not mosquitoes!



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Other CREEPY CRAWLERS



You turn over a rock in your back yard, and something darts quickly away. You see more than six legs, so it can't be an insect. What is it?

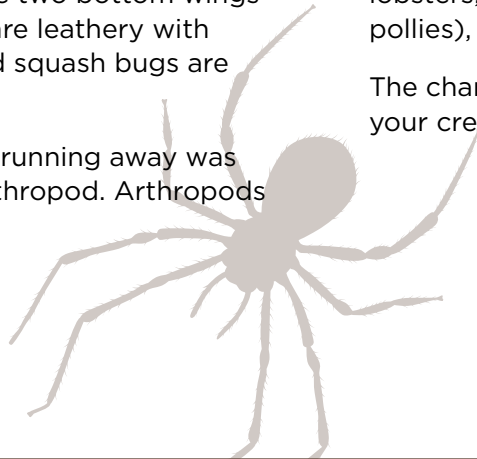
You may call the creepy crawler a bug, but most likely it is not a true bug. A bug is actually a type of insect. Bugs are insects that have four wings and sucking mouthparts. The two bottom wings are lacy, and the top wings are leathery with lacy tips. Water skippers and squash bugs are examples of true bugs.

The creepy crawler you saw running away was probably another type of arthropod. Arthropods

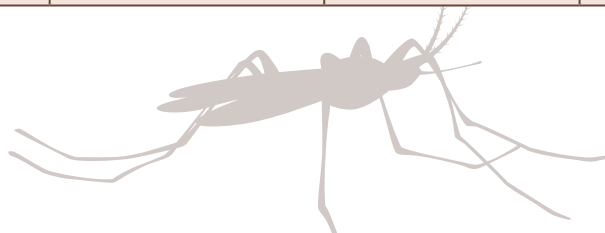
are animals that include insects and their relatives. All arthropods have exoskeletons and jointed legs. The word arthropod means "jointed foot."

Arthropods are divided into five main groups: arachnids (e-RAK-nids) (spiders, ticks, mites, scorpions), crustaceans (krus-TA-shens) (crabs, lobsters, crayfish, shrimps, sowbugs or roly pollies), centipedes, millipedes and insects.

The chart below will help you figure out where your creepy crawler belongs.

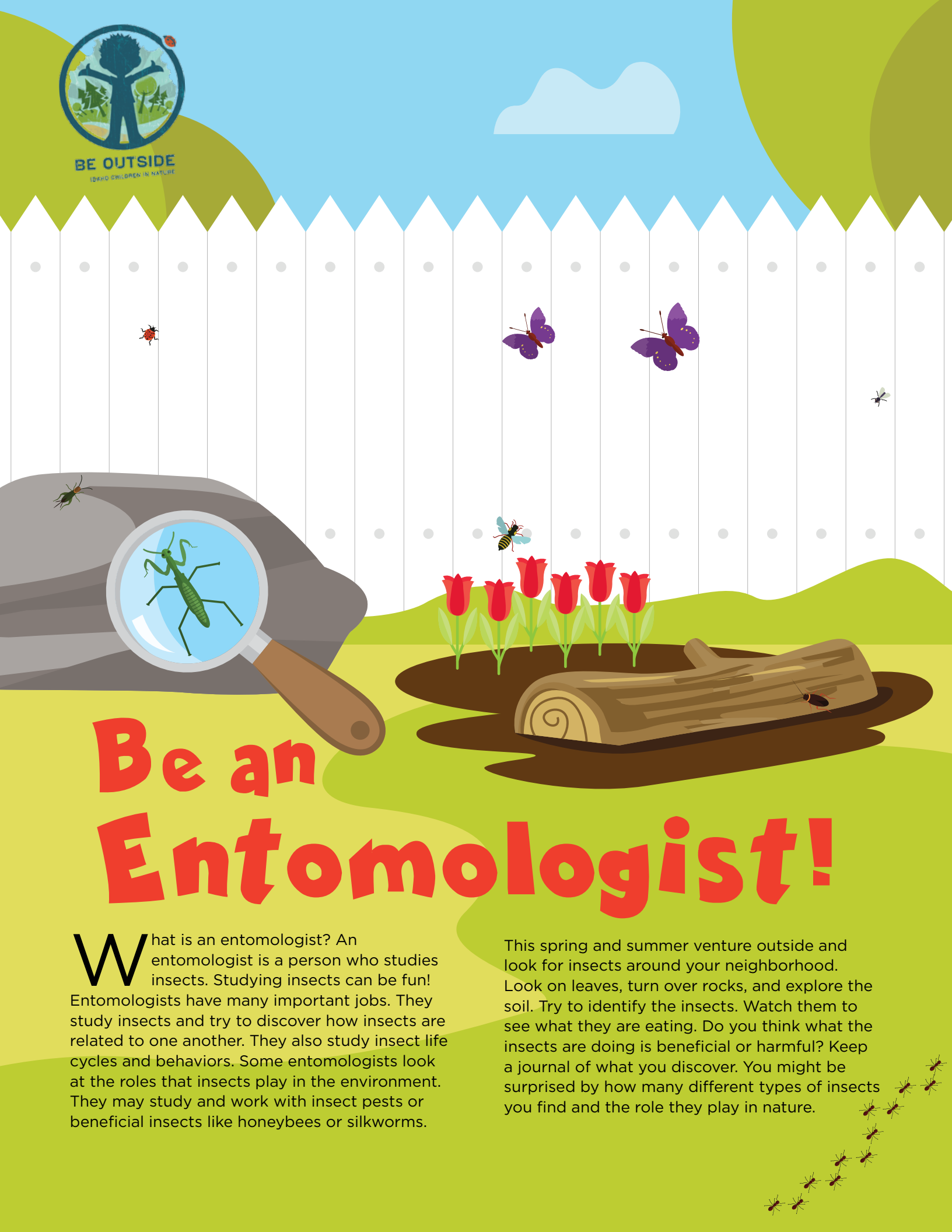


	Arachnids	Crustaceans	Centipedes	Millipedes	Insects
Body Parts	2	2	Many Segments	Many Segments	3
Legs	8	Usually 10	Many, 1 Pair per Segment	Many, Usually 2 Pairs per Segment	6
Antennae	None	2 Pairs	1 Pair	1 Pair	1 Pair
Habitat	Land	Saltwater and Freshwater, Rarely Land	Land	Land	Land and Freshwater, Rarely Saltwater





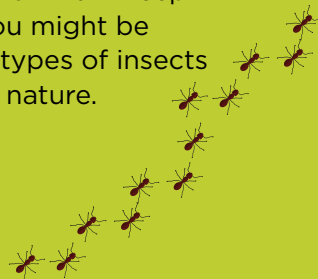
BE OUTSIDE
EDWARD CHILDREN IN NATURE



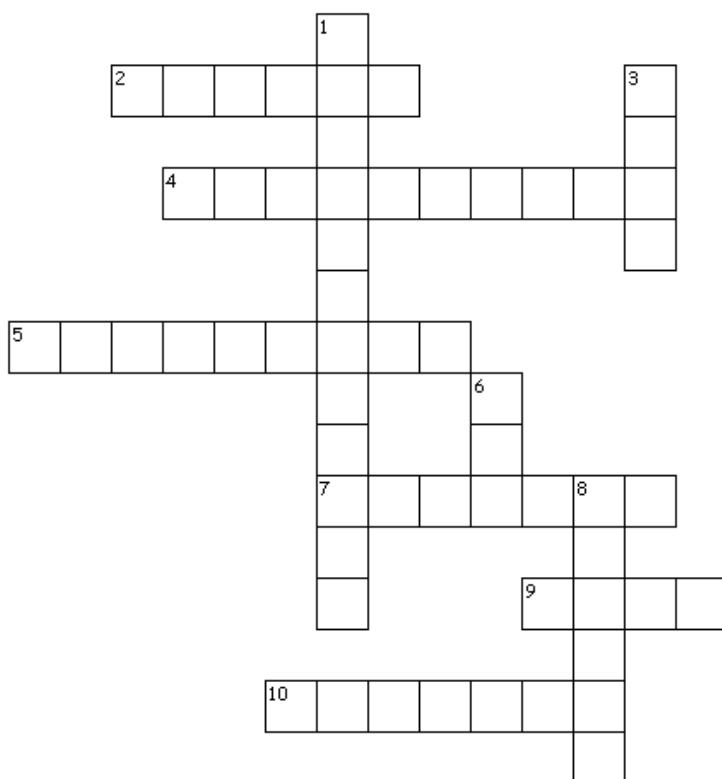
Be an Entomologist!

What is an entomologist? An entomologist is a person who studies insects. Studying insects can be fun! Entomologists have many important jobs. They study insects and try to discover how insects are related to one another. They also study insect life cycles and behaviors. Some entomologists look at the roles that insects play in the environment. They may study and work with insect pests or beneficial insects like honeybees or silkworms.

This spring and summer venture outside and look for insects around your neighborhood. Look on leaves, turn over rocks, and explore the soil. Try to identify the insects. Watch them to see what they are eating. Do you think what the insects are doing is beneficial or harmful? Keep a journal of what you discover. You might be surprised by how many different types of insects you find and the role they play in nature.



Mantid Criss-cross



Across

2. Idaho's native praying mantid is the minor _____ mantid.
4. This is the best defense for a ground mantid.
5. Tiny holes insects use to get oxygen.
7. Mantids eat mostly _____.
9. Praying mantids got their name for how they _____ their front legs.
10. This is the name for a mantid egg case.

Down

1. The name for a person that studies insects.
3. Ground mantids actively hunt their _____.
6. Minor ground mantids are about _____ inch long.
8. The middle part on an insect's body.

Words

Camouflage
Entomologist
Ground
Hold
Insects
One
Ootheca
Prey
Spiracles
Thorax

WILDLIFE EXPRESS

Volume 32 • Issue 9 • Praying Mantid • May 2019

Wildlife Express is published nine times a year
(September-May)
by the Idaho Department of Fish and Game

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WE WOULD LIKE TO HEAR FROM YOU!

If you have a letter, poem or question for Wildlife Express,
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